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1 OBITUARY

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3 Edwin George ('Ted') Spinner (1938–2018)

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6 (place the photograph supplied here) 7 1. Introduction and Ted's early years (1938–1957) 8 Edwin George ('Ted') Spinner passed away on 23 February 2018 at the age of 80. He was a 9 10 lifelong palynologist, Carboniferous megaspore expert and stalwart of the Palynology School at the University of Sheffield, England where he worked all his career. Ted Spinner was born 11 on 27 January 1938, the youngest of seven children, and was raised as part of a farming 12 family in the charming tiny village of Worlingworth, deep in rural Suffolk, southeast 13 14 England. Worlingworth is located between Bury St Edmunds and Southwold, and had a 15 population of only ~500 in the 1930s. Ted attended the local primary school and passed his eleven-plus examination, thereby winning him a place at Eye Grammar School. This 16 17 secondary school is in a small market town around 11 km northwest of Worlingworth. He and a friend were the first ever children from Worlingworth to pass these entrance examinations. 18 19 Because no pupils from Ted's primary school had ever achieved this feat, the Local Education Authority (LEA) buses did not connect Worlingworth to Eye Grammar School. 20 21 The solution to this dilemma was to provide Ted and his fellow pupil with 'LEA bikes' with which to cycle the seven mile journey to and from school! Ted excelled at Eye Grammar 22 School, being made Head Boy and appearing on the School academic honours board for two 23 consecutive years. He also passed his university entrance exams, the first member of his 24 family to achieve this. 25

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2. Undergraduate student life in Sheffield (1957–1960)

Ted chose to study Geology at the University of Sheffield, and travelled north by train
in the autumn of 1957. He would have arrived at the old Victoria Station in Sheffield, and

30 Ted's first impressions of the city would have been the steelworks in Attercliffe and Brightside. The contrast of industrial Sheffield with the John Constablesque landscape of 31 Suffolk he had left a few hours before could not have been more dramatic. This culture shock 32 that Ted undoubtedly faced would have been experienced by many first year students from 33 rural areas who arrived in Sheffield during the late 1950s. The city, like the rest of the 34 country, was in the process of rebuilding after World War II. Bomb-damaged buildings were 35 still obvious in many parts of Sheffield, trams trundled their noisy ways in almost every 36 37 direction and everywhere was subject to severe air pollution from the bourgeoning steel 38 industry. The young Ted Spinner must have been truly astounded to be living in a setting which was the absolute polar opposite of his idyllic and peaceful Suffolk home. 39

Ted spent his undergraduate days in lodgings in the southern Sheffield suburb of
Nether Edge at the home of the Collins family. He formed a very strong relationship with his
landlady, Mary Collins, which was to survive for over 40 years. Together with his fellow
1957 Geology students, Ted graduated in the summer of 1960; he achieved an Upper Second
(2:1) Honours Degree.

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3. Postgraduate research (1960–1964)

47 The Sheffield Honours Geology class of 1960 as a whole was extremely committed and engaged with the earth sciences. Consequently almost half Ted's fellow graduates 48 49 decided to continue in science via postgraduate research. Ted initially embarked on a PhD project funded by the Department of Scientific and Industrial Research close to his Suffolk 50 51 heart, a study of the Quaternary palynostratigraphy of the area around Hoxne, Suffolk which is ~37 km east of Thetford in southern Norfolk. This research project had substantial 52 53 difficulties from the outset with problems accessing suitable samples, and very poor palynomorph recovery from the material Ted had been able to collect. 54

55 Fortunately however, a suitable solution rapidly emerged to Ted's travails. The then Head of the Department of Geology at Sheffield, Professor Leslie R. Moore (1912–2003), 56 suggested that Ted work on Carboniferous megaspores under the supervision of himself and 57 the palaeobotanist Robert H. Wagner (1927–2018), who had been appointed at Sheffield 58 59 during 1960 with the task of reviving palaeobotany in the UK. Bob Wagner, who incidentally passed away only three days before Ted (Cleal et al. 2018), was at that time undertaking 60 61 research on the palaeobotany of the Middle Pennsylvanian [Asturian/Moscovian] Warwickshire Group of the Forest of Dean coalfield between the Severn and Wye valleys in 62 63 western Gloucestershire, southwest England (Moore 1954, Wagner and Spinner 1972, Waters

et al. 2007, Waters et al. 2011). Ted readily agreed to research the megaspores and miospores
from the Pennsylvanian successions in the Forest of Dean being studied by Bob Wagner. Ted
had a ready-made initial sample set and these were very productive; thus Ted's research path
on Carboniferous megaspores and miospores was set for life. Throughout his career,
however, he concentrated largely on megaspores (Supplemental data).

During the early1960's most of the adits and mines in the Forest of Dean coalfield 69 70 were readily accessible, and Ted took detailed sample collections of all the relevant successions exposed at that time. However, the extraction of the megaspores was a relatively 71 72 undeveloped technique at the time and Ted had to experiment. The palynology laboratory on the top floor of the Applied Science Building, overlooking St George's Church, on Mappin 73 74 Street naturally operated with the best contemporary health and safety standards. Despite this, many of Ted's contemporaries worried about the prodigious amounts of bromine he used! 75 76 Ted shared the laboratory with a diverse group of palynologists including Ralph Coffey, 77 Barrie Dale, Charles Downie, George Hart, M.A. Husain, Tony Jenkins, Dick Lister, Leonard 78 Love, Alan Marshall, David Mishell, Leslie Moore, Roger Neves, Bernard Owens, John Richardson, Frank Spode, Herbert Sullivan, John Varker, David Wall and Graham Williams 79 80 (Sarjeant 1984, Wellman 2005). Most working days ended at around 10 pm before 81 adjourning to the Hallamshire public house around the corner on West Street. Since most of the PhD students in this group had acquired motorbikes for fieldwork. Ted Spinner's 82 83 motorcycle of choice was a monstrous BSA 650cc; no doubt Ted in leathers astride this beast 84 was a truly awesome sight.

85 It was not, of course, all about work. Perhaps because he now lived in the city that 86 gave the beautiful game to the world (Farnsworth 1995), Ted decided early on in his 87 postgraduate days to become a football referee. He qualified first as a linesman (now assistant referee) and then as a referee able to officiate at Sheffield and Hallamshire Football 88 89 Association Sunday League matches. Local football played according to Ted Spinner's interpretation of the rules did not always meet with the approval of players and spectators. 90 The BSA 650cc was clearly a sound idea! Football refereeing duties notwithstanding, Ted 91 worked very hard on his PhD, and was duly awarded this degree in 1964 for a thesis entitled 92 93 Megaspores and miospores from the Forest of Dean Coalfield. This was partially published as Spinner (1965). 94

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4. A scientific career at the University of Sheffield

97 Immediately after obtaining his PhD, Ted was appointed a Research Fellow at Sheffield supervised by Leslie Moore to work on the organic remains in the Precambrian 98 Nonesuch Shale Formation (Oronto Group) from the Lake Superior Basin in Ontonagon 99 County, Michigan, USA. The Nonesuch Shale Formation is a lacustrine siliciclastic unit of 100 Middle Proterozoic age which contains substantial organic carbon which has been interpreted 101 102 as being evidence of photosynthesis (Meinschein et al. 1964). Ted was a co-author of Moore et al. (1969) who reported an ecosystem of fungal remains and apparently saprophytically 103 104 degraded palynomorphs from this unit.

During his time as a Research Fellow, Ted also continued his work on Carboniferous megaspores including a productive collaboration with Mavis Butterworth (1927–1996) who, at the time, was also a Research Fellow in the Department of Geology (Butterworth and Spinner 1967). After his Research Fellowship, ended Ted was appointed as a lecturer in 1965 (is 1965 right Charlie, or was it 1971?) and remained on the staff at Sheffield until his retirement in 1997.

111 Ted lectured in geology to the undergraduates and also on the famous Sheffield 112 Master's course in Palynology that began in 1967 and was run until 2001. This course was a one-year programme comprising taught modules with a final examination, and practical work 113 114 including an original research dissertation. For most of its life it was approved and funded by the Natural Environment Research Council as a part of its range of vocational postgraduate 115 116 awards. During his time in Sheffield, Ted interacted with all of the ~300 palynology students (>200 MSc and >100 PhD) that graduated through the Sheffield Palynology School (Spinner 117 118 1986, Wellman 2005). Ted was an incredibly popular lecturer whom students naturally gravitated towards. He adopted an open-door policy and was a first port of call for students 119 120 for academic advice or to air their concerns and problems that Ted would solve in a most genial manner. Ted diffused difficulties for students so effectively, the vast majority of these 121 122 cases never troubled the more formal departmental hierarchy. It is not too surprising that Ted's extremely skilful pastoral care of students lead to roles working with students in the 123 university halls of residence. Between 1965 and 1973, Ted served as a Tutor at Earnshaw 124 Hall. Later, between 1975 and 1983, Ted was Warden of Tapton Hall. This was a role in 125 126 which he was particularly successful, operating as an efficient director but still accessible and available to the students. 127

128 Charles Downie and Roger Neves ran the Sheffield Master's course in Palynology 129 during the 1970s and early 1980s; both retired in 1984 and Ted became course director. He 130 duly set about invigorating and modernising the course in order to ensure its survival through

what were extremely challenging times in the UK Higher Education sector. Specifically the 131 University Grant Committee Earth Sciences Review recommended closure of the Department 132 of Geology at Sheffield in 1987. A number of near-simultaneous staff retirements 133 immediately prior to this exercise in scrutiny, which was not repeated for other subjects, had 134 made the department vulnerable. As a result, during 1988, the Palynology School was 135 reorganised. Despite the potential closure of the Department of Geology, the MSc and PhD 136 programmes in palynology were thriving and graduates continued to be in great demand. The 137 Centre for Palynological Studies (CPS) was instigated with Ted as its first Director. 138 139 Alongside the CPS, an informal Industrial Palynology Unit was informally set up (Wellman 2005). Ted ran the CPS and undertook the majority of the teaching and supervision. He was 140 helped in particular at that time by Ken Dorning and Wolfgang Wille, together with 141 numerous honorary/visiting lecturers most of whom were Sheffield graduates. The 142 Department of Geology was finally closed in the summer of 1990 and the CPS was 143 transferred to the Department of Animal and Plant Sciences. Ted had a significant boost in 144 145 1991 when the Paleogene palynology expert David Jolley, was appointed by the CPS as a new lecturer in palynology. This appointment eased Ted's administrative and teaching duties, 146 and increased the breadth of stratigraphical coverage in the CPS. 147

148 Ted formally retired in 1997. It is an indication of the esteem and respect for him
149 within the community that a retirement dinner for ex-Sheffield palynologists was organised at
150 Tapton Hall by Tony Loy and Pat Mellor. This event was attended by over 100 former
151 colleagues and students, including some that had travelled from as far away as Canada and
152 the USA.

Ted also diligently and generously served the broader geological community, 153 154 involving himself in the development and organisation of the teaching of geology in secondary schools in the UK. Between: 1970 and 1975, Ted was responsible for the 155 introduction of geology teaching within the Postgraduate Certificate in Education in the 156 Department of Education at Sheffield; this comprised a novel, fieldwork-based approach. 157 Subsequently he became the Chair of Examiners for the Northern Universities Joint 158 Matriculation Board Geology Advanced Level course, studied by 16–18 year olds. He was 159 160 responsible to the board for the development of the syllabus, and for the setting and marking of examination papers. 161

In addition to his administration and teaching duties, Ted was also a highly successful
 scientist; he supervised many MSc, MPhil and PhD projects. Moreover, he published
 numerous scientific papers including collaborations with colleagues such as Mavis

165 Butterfield, David Jolley, Bob Wagner and Charles Wellman, and postgraduate students such as Steve Brindley and Nick Turner (Supplemental data). These papers were largely on 166 Carboniferous megaspores, but also on other diverse subject areas deriving from postgraduate 167 student research projects. He worked mainly on the Carboniferous megaspores of the UK, 168 however Spinner (1969) and Jolley and Spinner (1989) were Ted's only ventures outside 169 Europe and on marine palynomorphs respectively. Ted also undertook voluntary work for 170 scientific societies. This included a stint as the Newsletter Editor for the British 171 Micropalaeontological Society (now The Micropalaeontological Society) between 1979 and 172 173 1983, and sat on the Council of the Yorkshire Geological Society (1983–1985). Ted Spinner will be remembered with great affection by all the students he 174 encountered at the University of Sheffield, be that in his capacity as Hall Tutor/Warden, 175 Lecturer or Supervisor. Ted could be old fashioned in certain respects, but in others he was 176 very much on the right side of history. For example, he much preferred to adopt a lively tone 177 in scientific writing avoiding the passive tense and using pronouns such as 'we' and 'our'. 178 This more dynamic and sprightly style is now the new norm in science writing in North 179 180 America, and is rapidly becoming much more common in Europe. All his students and colleagues will recall his innate charm as well as his very forthright and robust views, 181 182 stridently expressed. Another trademark was his trusty pipe charged with highly aromatic tobacco. The pipe was always with him, lit or unlit, and was used to great effect as an aid to 183 184 gesticulation when he offered his wise council (see the photograph above). The Sheffield Palynology School owes Ted Spinner a huge debt of gratitude for a lifetime of dedication. 185 186 Bernard Owens, Michael Romano, Charles H. Wellman 187 188 Department of Animal and Plant Sciences, University of Sheffield, Alfred Denny Building, Western Bank, Sheffield SIO 2TN, UK 189 190 James B. Riding 191 British Geological Survey, Keyworth, Nottingham NG12 5GG, UK 192 jbri@bgs.ac.uk 193 Orcid: 0000-0002-5529-8989 194 195 196 Supplemental data 197 198 Supplemental data for this article can be accessed here

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253	SUPPLEMENTAL DATA
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255	This Appendix is a chronologically-arranged list of Ted Spinner's 33 major scientific
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